

**BRACHYSTELES PARVICORNIS (COSTA), A SPECIES OF
ANTHOCORIDAE NEW TO NORTH AMERICA
(HEMIPTERA: HETEROPTERA)**

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Abstract.—The Palearctic species of Anthocoridae, *Brachysteles parvicornis* (Costa), is newly recorded from two localities in North America. It is considered an accidental introduction from Europe.

Brachysteles parvicornis (Costa) is a Palearctic species of Anthocoridae, whose natural range includes much of western Europe from Denmark to North Africa, and southeastern England to Yugoslavia with a disjunct population in the Crimean Region (Péricart, 1972). The species is found in mosses and lichens on trees, including species of *Pinus*, *Buxus*, *Juniperus* and ericaceous plants, a habitat somewhat different from most Anthocoridae, but not unlike that of many Microphysidae (Carayon, 1972; Péricart, 1972). It has also been collected in moist prairies or marshes on *Carex* spp. and other herbs. Although the species may feed on small insects and arthropods, its chief prey seems to be members of the mite suborder Oribatida (Carayon, cited in Péricart, 1972). Only a single, rather protracted generation occurs in Europe, at least throughout most of its range. Hibernation takes place in the adult stage, usually under the bark of trees in the genera *Ulmus*, *Larix* and *Platanus* (Péricart, 1972). Sometimes, large numbers of individuals are encountered. Mature nymphs were collected toward the end of July near Paris.

Specimens of *Brachysteles parvicornis* were discovered in the collection of the American Museum of Natural History, New York. One series of three males and one female bore the following data: [New York] Huntington L. I., Dec[ember] 13, 1925, under pine B[ar]k, F. M. Schott. The second record is a single male from: N[ew] J[ersey], Noodline, V. 11. 1925, F. M. Schott.

The genus *Brachysteles* Fieber is a member of the tribe Dufouriellini (Lycocorinae), as recognized by Štys (1975). Six species are now recognized in the genus (Péricart, 1972:259), two of these occur in the western Palearctic, *B. parvicornis* (Costa) and *B. wollastoni* White and the others occur in the Middle East and Far East.

Brachysteles pallidus was described from the Caribbean by Reuter (1884), reported from the "Southern States" by Uhler in 1886, and included in Blatchley (1926). Barber (1939) transferred *Brachysteles pallidus* Reuter to *Paratriphleps* Champion where it now remains, and thus the genus *Brachysteles* is not considered to occur in North America (Henry, 1988).

Brachysteles parvicornis closely resembles North American species of *Cardiastethus* Fieber. It is a small (2.1–2.5 mm total length) species, with the head and pronotum dark chestnut brown and the hemelytra yellowish brown (Fig. 1). The dorsum is thickly clothed with long, semierect golden pubescence. In Herring's (1976) key to

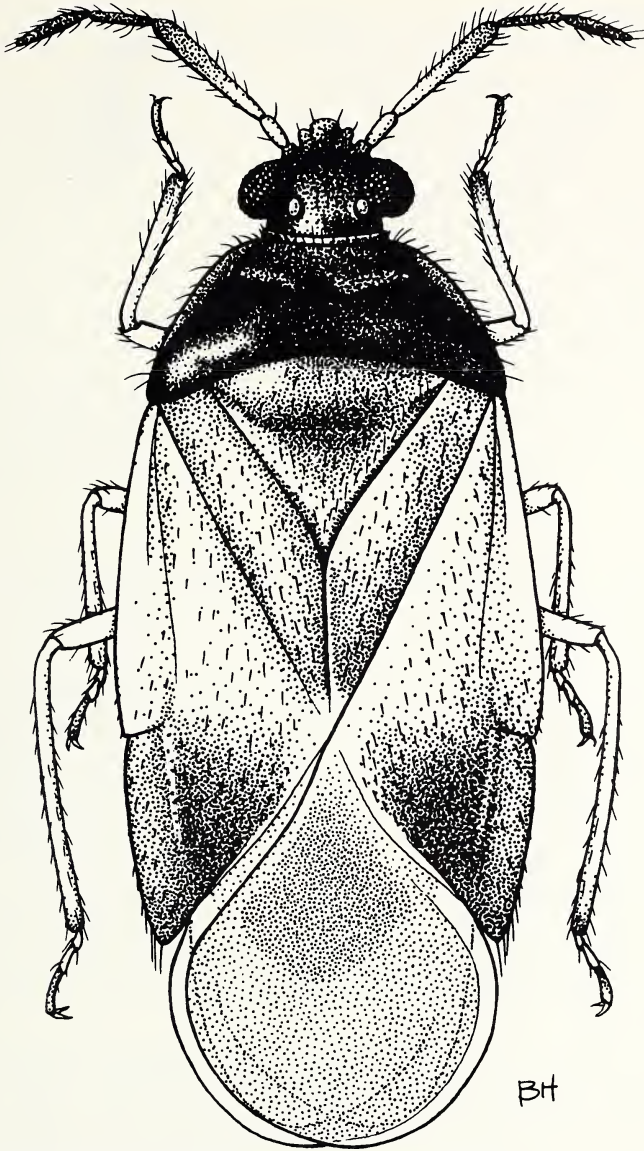
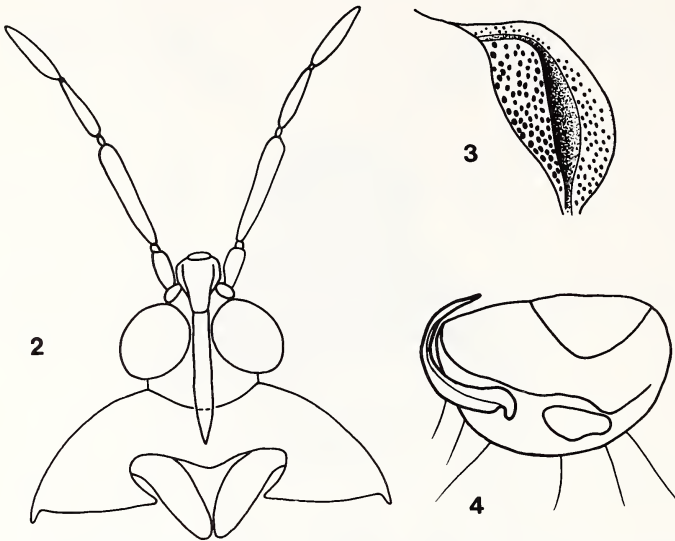


Fig. 1. *Brachysteles parvicornis*. Dorsal habitus of adult male.

the genera of North American Anthocoridae, *B. parvicornis* will run to *Cardiastethus*. It may be distinguished from *Cardiastethus* principally by the short rostrum, which does not reach the procoxal cavity (Fig. 2). In all North American *Cardiastethus*, the rostrum reaches at least to the procoxae. *Brachysteles parvicornis* also has an extremely short head, with the first antennal segment extending beyond the apex of the tylus. In species of *Cardiastethus*, the first antennal segment at most only reaches the



Figs. 2-4. *Brachysteles parvicornis*. 2. Ventral view, showing relative length of rostrum and antennal segments. 3. Peritreme of left metathoracic scent gland. 4. Dorsal view of male genital capsule and clasper.

tip of the tylus. The scent gland of *B. parvicornis* has the general shape of that found in *Cardiastethus*, but differs in that the anterior extension of the channel is well below the dorsal edge of the peritreme (Fig. 3). In *Cardiastethus*, this extension lies along the dorsal edge of the peritreme, often as a raised ridge. The male clasper of *B. parvicornis* is very similar to those of North American *Cardiastethus* (Fig. 4), but differs in being shorter and thicker than *C. cavicollis* Blatchley, *C. borealis* Kelton and *C. assimilis* (Reuter).

Péricart (1972) provided a detailed discussion of this species. Males are macropterous with the tip of the wing extending beyond the apex of the abdomen. Females may be macropterous, submacropterous (wing tip just reaching apex of abdomen), or brachypterous. All specimens examined from North America (males and females) were macropterous.

Because this species is known only from two collections near metropolitan sea ports, we view this as a European introduction. The occurrence of specimens from two different localities suggests the possibility of established populations, although we have not yet seen additional material. This is a small, inconspicuous bug, and easily overlooked in the field. Several other species of Anthocoridae are presently considered accidental introductions into North America, including *Orius minutus* (L.) in the Pacific Northwest (Tonks, 1953), *Anthocoris confusus* Reuter in the Northeast (Anderson and Kelton, 1963), *Anthocoris nemoralis* (F.) in the Pacific Northwest and Ontario (Anderson and Kelton, 1963), *Temnostethus gracilis* Horváth and *Acomporis pygmaeus* (Fallén) into the Northeast (Kelton, 1977).

Because both the historical and present day distributions of many species are poorly known, their status as natural residents of North America or as introductions remains

unresolved. For example, *Xylocoris galactinus* (Fieber), *X. cursitans* (Fallén), *Dufouriellus ater* (Dufour) and *Lyctocoris campestris* (F.) occur in North America and also occur in the Palearctic region (Péricart, 1972; Kelton, 1978).

Brachysteles parvicornis could be a native North American species, occurring naturally in both Europe and the eastern United States, although this is unlikely. Alternatively, the specimens could represent an undescribed species of North American *Brachysteles* closely related to *parvicornis*. There are several examples of amphiatlantic species pairs of Heteroptera (Schaefer and Calabrese, 1980). In Europe, *Brachysteles parvicornis* is polymorphic with macropterous, submacropterous and brachypterous forms, while only macropterous specimens have been collected in North America. The taxonomy of these morphs and different populations is still equivocal (J. Péricart, pers. comm.). The confirmation of the North American record was based upon a female specimen. The distribution and relationships of the Dufouriellini in North America are imperfectly known. For example, several of the eastern species of *Cardiastethus* are known only from the type localities. Careful collecting, with attention to phenology, habitat and habits will be required to clarify these problems.

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